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AN IMPROVED, AUTOMATIC SMOKING
MACHINE FOR THE LARGE SCALE
COLLECTION OF CIGARETTE SMOKE
CONDENSATE.

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ABSTRACT

An improved, fully automatic smoking machine has been designed and built for the large scale collection of cigarette smoke condensate. In addition to its excellent performance, outstanding characteristics are simplicity of design, versatility, and truly-automatic operation. This machine smokes regular (70 mm) cigarettes at the rate of 540 per hour, subjecting them to the normal puffing sequence of two seconds duration, 35 ml. volume, once a minute. A maximum of ten puffs can be taken on each cigarette. Conditions of smoking, such as puff duration, puff volume, puff frequency, and number of puffs can be changed with only minor adjustments. In addition, the machine can be operated with either "free" or "restricted" smoking. Cigarettes are automatically loaded, lighted with a proximity-type lighter, puffed, using a modified constant time principle and, after the desired number of puffs, automatically ejected and extinguished. The operator's function has been reduced to one of merely keeping the hopper filled and being present in the event of some minor malfunction. Smoke condensate comes in contact only with glass, Teflon and stainless steel. The design is such that the condensate manifold can easily be disassembled and cleaned. The details of construction and operation of the device will be discussed. Puff profile and smoke condensate yields will be compared with those from other types of smoking machines.

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